

REMARKS

Claims 1 and 24 have been amended. Claims 1, 6, 7, 11-14, 22, 24-30 and 33-35 are pending in this application and presented for reconsideration.

Claims 1, 6, 7, 11-14, 22 and 33-35 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner states that it is unclear in the recitation “each of said threads of the first component member having a predetermined lead angle,” in the first subparagraph of claim 1, whether the lead angles of each thread are all the same or different. Applicant has amended claim 1 to recite “each of said threads of the first component member having a same predetermined lead angle” making clear that all the threads have the same lead angle. Accordingly, it is requested that the rejection of claim 1, and its dependent claims, under 35 U.S.C. 112, second paragraph, be withdrawn.

Claims 1, 6, 7, 11-14, 22, 24-30 and 33-35 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US Patent 1,849,522). Independent claims 1 and 24 have been amended and with respect to these claims, and their dependent claims, the Examiner’s rejection is respectfully traversed.

Applicant’s invention, as recited in amended independent claims 1 and 24, includes a first component with threads extending at a first lead angle and a second component with a first lead angle thread and a second lead angle thread. The first lead angle thread extending over its entire length at the first lead angle and the second lead angle thread extending over its entire length at a second lead angle and disposed between two of the threads of the second component member. Independent claims 1 and 24 also recite that when the first and second components transition towards a fully closed position, the threads on the first component and the threads on the second

component are engaged such that the threads are elastically deformed by each other and the first and second components maintain their engaged relationship by the frictional engagement of threads having differing lead angles. It is noted that the various passages above that are underlined reflect features of the present invention that are not disclosed in the cited prior art, as discussed further below.

As indicated above, independent claims 1 and 24 now recite that the thread that extends at the second lead angle is “disposed between two of the threads of the second component member.” Support for this feature clearly is found in at least in Fig. 1A and 10 of the drawings.

Hammer discloses a cap (1) with projections (10) which cooperate with threads (3) on a container (2) to seal the cap (1) onto the container (2), the projections (10) and the threads (3) having the same lead angle (page 1, lines 69-77). The threads (3) terminate in a stop (9) located at the inner end of the threads (3) to limit the movement of the cap (1) towards a closed position (page 1, lines 91-96). The cap (1) also includes a gasket (11) providing for the creation of a vacuum seal between the cap (1) and the container (2) when the cap (1) is in a fully closed position (page 1, lines 76-78). In order to more easily break the vacuum seal when attempting to remove the cap (1) from the container (2), cams (5) are positioned below the inner end of the threads (3), the full length of the cams (5) remaining below the inner end of the threads (3). When the cap (1) is turned backwards from a fully closed position at which point the projections (10) are free of the threads (3), a projection (10) engages a cam (5) of the next succeeding thread (3) which forces the cap (1) upward and helps break the vacuum seal between the cap (1) and the container (2) (page 2, lines 3-13).

In the Office Action, the Examiner asserts that the first component and female screw threads of the present application correspond to the cap and projections in Hammer (Office

Action, page 3, lines 1-2). The Examiner also asserts that the second component and the first lead angle thread of the present application correspond to the container and threads in Hammer. Lastly, the Examiner asserts that the second lead angle thread of the present application corresponds to the cams in Hammer (Office Action, page 3, lines 2-5).

Applicant disagrees with the Examiner's assertion that the cams in Hammer correspond to the second lead angle thread of the present application. As described above, the cams in Hammer do not disclose the structural limitations of the second lead angle thread of the present application.

Firstly, the cams in Hammer are not threads, such as either the first lead angle thread and the second lead angle thread of the present application. The cams in Hammer do not engage with the projections on the cap in a manner which defines the rotation of the cap relative to the container, the rotation being clockwise from an open position to a fully closed position and counterclockwise from a closed position to a fully open position. Rather, the cams in Hammer engage with the projections on the cap only when the cap is turned counterclockwise from a fully closed position. Moreover, when the cams and the projections do engage, it is not in a manner which defines the rotation of the cap relative to the container. Rather, it is to bend a portion of the cap upward to facilitate breaking a vacuum seal between the cap and the container. Therefore, the cams in Hammer do not teach or suggest a thread such as the second lead angle thread of the present application.

Secondly, the cams in Hammer do not elastically deform when they do engage the projections of the cap. The cams in Hammer are purposely composed of a rigid material, such as glass, to facilitate their effectively pushing a projection sufficiently upward to break a vacuum seal between the cap and the container. Cams composed of an elastic material which deformed

when engaged by a projection would actually inhibit the breaking of the vacuum seal between the cap and the container. As such, Hammer teaches away from cams which elastically deform when engaged. Therefore, the cams disclosed in Hammer do not teach or suggest that the threads on the first component and the threads on the second component are engaged such that the threads are elastically deformed by each other.

Thirdly, the cap and the container in Hammer do not maintain their engaged relationship while transitioning towards a closed position by the frictional engagement of the cams and the projections. This is not possible since the cams and the projections in Hammer never engage while the cap is rotated clockwise from an open position to a closed position. Rather, the cams engage the projections on the cap only when the cap is turned counterclockwise from a fully closed position and only for as long as the vacuum seal is maintained. Once the vacuum seal is broken as a result of a projection being pushed upward by a cam, the projections engage the threads of the container without continuing to engagement the cams. Therefore, the cams in Hammer do not teach or suggest the first and second components maintain their engaged relationship while transitioning towards a closed position by the frictional engagement of threads having differing lead angles.

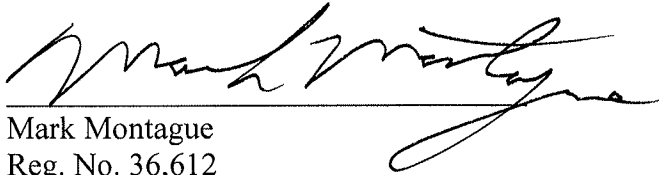
Lastly, the cams in Hammer do not extend over their entire length at a second lead angle and are not disposed between two other threads on the container. Rather, the cams in Hammer are positioned below the inner end of the threads on the container, the full length of the cams remaining below the threads. Therefore, the cams in Hammer do not teach or suggest a second leading angle thread extending over its entire length at a second lead angle and disposed between two of the threads of the second component member.

In view of the foregoing, independent claims 1 and 24, and their respective dependent claims, thus patentably distinguish over the Hammer reference. It is therefore requested that the rejection of the claims as being obvious in view of Hammer be withdrawn.

In view of the above, reconsideration and allowance of the present application are respectfully requested.

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